

Atty. Docket No.: BOON.P001

Patent 09/627,486

REMARKS

Claims 1-18 are pending in the application. Claims 12, 13, and 14 are amended herein. Claims 19-44 are added herein. No claims have been allowed.

Rejections under 35 U.S.C. § 102

Claims 1-18 were rejected under 35 U.S.C. § 102(e) as being anticipated by Riggan et al. (U.S. Patent 6,490,252), hereinafter "Riggan". Applicants respectfully submit that the claims are patentable over Riggan.

Riggan discloses a system and method for an asynchronous transfer mode (ATM) data traffic network (Abstract). ATM is a notoriously well-known packetized transfer mode. ATM networks carry various types of information (e.g., voice, data, video), each packetized in a uniform format for transport over the ATM network. All aspects of information transfer via ATM networks have been standardized to a high degree, for example in the ITU-1 Recommendation 1.371. As noted at column 1, lines 29-45, the Recommendation specifies policing traffic through an ATM-based network via the use of traffic management contracts. The traffic management contracts are between an ATM network user and the ATM network provider. The contracts include a guaranteed bandwidth to be provided to the user. The guaranteed bandwidth relates to the quality of service (QoS) a user can expect.

An ATM-based network can carry traffic at predetermined QoS levels. Riggan discloses determining when the QoS traffic contract bandwidth limit has been exceeded or is likely to be exceeded, and in response, re-formatting the information for transport over an alternative network that is not an ATM network based on the data type. For example, voice traffic is transferred to a public branch exchange (PBX), and thence to a public switched telephone network (PSTN). (column 1, line 61-column 2, line 4).

In the method and system of Riggan, the quality of alternate networks that may be available to carry information is not monitored in real-time. One reason is that the candidate alternate networks (such as PSTN) have specified characteristics that do not change. Rather than monitoring the quality of candidate alternate networks, Riggan is limited to determining whether there is congestion on the ATM network such that a

Atty. Docket No.: BOON.P001

Patent 09/627,486

predetermined QoS level will likely be exceeded. This determination includes consideration of past usage patterns, the source of the data to be transmitted, and type of data to be transmitted. (column 2, lines 23-36). Applicants respectfully submit that Riggan lacks multiple elements of the invention as claimed. For example, Riggan does not disclose real-time monitoring of any networks to determine current quality.

Regarding claim 1, Riggan simply lacks any teaching or disclosure of real-time buying and selling of bandwidth. In addition, Riggan lacks any disclosure regarding a router as claimed. For example, Riggan does not disclose a router with switching circuitry as claimed that measures a traffic level on each of the input ports, identifies types of packets, and outputs traffic information in response thereto. In contrast, the switchunit 306 (FIG. 3B and column 6, lines 30-40), is a well-known packet switch that "switches relevant packets to and from the ATM network interface". There is no teaching or suggestion in Riggan of at least: measuring a traffic level on each of the input ports; identifying types of packets; and outputting traffic information in response thereto.

Because Riggan lacks at least one element of claim 1, the claim is not anticipated by Riggan. Applicants further respectfully submit, however, that Riggan similarly lacks a switch controller as claimed and a route optimizer as claimed. For example, Riggan simply fails to teach or suggest any component that measures traffic levels on input ports. Riggan contains absolutely no teaching regarding an output port connected to a fixed-capacity bandwidth provider or a usage-based bandwidth provider. As previously stated, Riggan is limited to describing: determining when the QoS traffic contract bandwidth limit has been exceeded or is likely to be exceeded; and in response, re-formatting the information for transport over an alternative network that is not an ATM network. For example, voice traffic is transferred to a public branch exchange (PBX), and thence to a public switched telephone network (PSTN). (column 1, line 61-column 2, line 4). For these reasons, Applicants respectfully submit that claim 1 is not anticipated by Riggan.

Claims 2-9 depend from patentable claim 1 and include further limitations thereon. Therefore, claims 2-9 are similarly patentable over Riggan.

Claim 10 recites a method for handling overflow traffic for a bandwidth user that has purchased a total fixed amount of bandwidth capacity, the bandwidth user outputting traffic to an input port, the traffic having a traffic level. Applicants respectfully submit

Atty. Docket No.: BOON.P001

Patent 09/627,486

that Riggan does not teach or suggest the invention of claim 10. For example, Riggan does not disclose purchasing a fixed amount of bandwidth. Riggan only discloses the non-analogous practice of contracting for a guaranteed bandwidth related to the quality of service (QoS) a user can expect in an ATM context. Riggan does not disclose traffic levels at input ports. Riggan only predicts when a network provider may experience congestion on the ATM network such that a predetermined QoS level will likely be exceeded. This determination includes consideration of past usage patterns, the source of the data to be transmitted, and the type of data to be transmitted. (column 2, lines 23-36).

In addition, Riggan does not disclose or suggest monitoring a traffic level on an input port, or determining whether the traffic level is near the total fixed amount of bandwidth capacity. Because Riggan does not teach or suggest all of the limitations of claim 10, Applicants respectfully submit that claim 10 is not anticipated by Riggan.

Claims 11-13 depend from patentable claim 10 and include further limitations thereon. Therefore, Applicants respectfully submit that claims 11-13 are patentable over Riggan.

Claim 14 includes at least one limitation not taught or suggested by Riggan. For example, Riggan does not disclose or suggest continually measuring an amount of time required to send data to the end destination on each of the bandwidth providers that provide service to the end destination. For example, at column 8, lines 45-65 Riggan discloses determining whether the traffic on the ATM network has exceeded the QoS threshold based on usage levels of the ATM network. If the threshold is not exceeded, the traffic is routed on the ATM network; if the threshold is exceeded, the traffic is routed to a different type of network ("the appropriate secondary network") based on the type of data. There is simply no disclosure in Riggan regarding continually measuring an amount of time required to send data to the end destination on each of the bandwidth providers that provide service to the end destination. For these reasons, Applicants submit that Riggan does not anticipate claim 14.

Claim 15 depends from, and adds further limitations to, patentable claim 14. Applicants respectfully submit that claim 15 is therefore similarly patentable over the cited art.

Atty. Docket No.: BOON.P001

Patent 09/627,486

Claim 16 recites a method for ranking a list of bandwidth providers that provide service from a start point, the bandwidth providers including backbone providers and bandwidth resellers, including identifying each backbone provider that provides service from the start point to an end destination to form a list of backbone providers for the end destination, and removing backbone providers from the list of backbone providers when the backbone providers indicate that usage-based capacity is not available for sale to form a modified list of backbone providers

Riggan provides absolutely no teaching or suggestion regarding ranking a list of bandwidth providers, including bandwidth resellers, that provide service from a starting point. Riggan does not disclose a list of bandwidth providers. Rather, Riggan teaches away from the claimed invention (see column 5, lines 30-45) by teaching predictive statistical analysis to identify time periods when the ATM user most frequently exceeds the bandwidth limit of the ATM network contract. The controller reroutes traffic based on the prediction, or alternatively based on the prediction and on actually exceeding the threshold. Thus Riggan only considers usage of the ATM network and ATM network contracts, and teaches away from ranking different providers of bandwidth, including bandwidth resellers, that provide service from a starting point.

Further, at column 6, lines 45-65, Riggan teaches away from the claimed invention by teaching, when the QoS threshold is or might be exceeded, rerouting traffic to a specific type of network that is designed to handle the type of data. Thus, rerouting is done based only on whether or not the contract ATM QoS is or might be exceeded on the ATM network, and rerouting is done to an alternate network based only on the type of data the traffic contains. This is in contrast to ranking bandwidth providers, including bandwidth resellers, as claimed. For these reasons, Applicants submit that claim 16 is not anticipated by Riggan.

Claims 17 and 18 depend from claim 16 and include further limitations thereon. Therefore, Applicants respectfully submit that claims 17 and 18 are similarly allowable.

Applicants respectfully submit that new claims 19-30 are allowable over the prior art. Claim 19 recites a method for buying and selling Internet protocol (IP) transit comprising bandwidth, the method comprising: buying bandwidth in real-time from backbone providers; selling bandwidth in real-time to users; and reselling bandwidth in

Atty. Docket No.: BOON.P001

Patent 09/627,486

real-time to users, wherein the bandwidth to be resold is excess bandwidth previously purchased by users. Riggan does not teach or suggest such a method. In fact, Riggan teaches away from the claimed invention by teaching only rerouting of ATM packets to alternate networks chosen based on data type, where the rerouting is done in response to actual or predicted capacity of the ATM network. Therefore, Applicants submit that claim 19 and its dependent claims 20-30 are allowable over the prior art.

Applicants respectfully submit that new claims 31-44 are allowable over the prior art. Claim 31 recites a method for buying bandwidth in real-time from backbone providers, wherein buying includes consideration of a quality of service offered by backbone providers; selling bandwidth in real-time to users, wherein selling includes consideration of the quality of service requested by users; and reselling bandwidth in real-time to users, wherein the bandwidth to be resold is excess bandwidth previously purchased by users. Riggan does not teach or suggest such a method. In fact, Riggan teaches away from the claimed invention by teaching only rerouting of ATM packets to alternate networks chosen based on data type, where the rerouting is done in response to actual or predicted capacity of the ATM network. Therefore, Applicants submit that claim 31 and its dependent claims 32-44 are allowable over the prior art.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that claims 1-44 are in condition for allowance. The allowance of the claims is earnestly requested. The Examiner is invited to call the undersigned if there are any issues that remain to be resolved prior to allowance of the claims.

Atty. Docket No.: BOON.P001


Patent 09/627,486

AUTHORIZATION TO CHARGE DEPOSIT ACCOUNT

Please charge deposit account 501914 for any fees due, and not paid herewith, in connection with this Office Action response.

Respectfully submitted,
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